

## POWER WITHIN BLENDED LANGUAGE LEARNING PROGRAMS IN JAPAN

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As blended language learning environments evolve within tertiary foreign language institutions, issues of power with regards to the privileging of electronic technologies come to the fore. Blended learning, or the principled mix of online and classroom-based activities, challenges the practices of traditional CALL and face-to-face teaching within newly emerging, hybrid learning environments. The aim of this study is to examine the role of power in relation to the design of these environments. To achieve this aim, a research team conducted a longitudinal study at two Japanese universities which employed blended learning practices in their EFL programs. We analyzed ethnographic and action research data using postmodern, critical, and ecological perspectives on technology, to explore hegemony in facility planning (online vs. face-to-face), control of materials development (publisher-based vs. teacher-based authorship), and development of software designs (proprietary ownership vs. distributed teacher initiatives). Results of the study reveal three significant changes in power: (a) the construction of classrooms shifted from single-purpose CALL laboratories to blended face-to-face/online spaces, (b) the production of teaching materials emphasized locally authored multimedia materials with a decreasing reliance on mass-market course books, and (c) the design of software modules was controlled by teaching teams for rapid customization. Overall, the process of innovation in institutional programs requires a collaborative management culture to be appropriate and sustainable in university contexts.

**Keywords:** Computer-Assisted Language Learning, Blended Language Learning, Action Research, Institutional Ethnography, Actor-network Theory, Critical Theory, Ecological Perspectives

### INTRODUCTION

Research in CALL has been criticized for a focus on narrow investigations of single-package solutions (Egbert, Huff, McNeil, Preuss, & Sellen, 2009) and analysis within de-contextualized settings (Cutrim Schmid, 2006). In response, researchers have called for more studies based on contextual inquiry across broad institutional programs (Kern & Warschauer, 2000; Levy & Stockwell, 2006). As universities gain pace in the adoption of blended language learning (Latchem & Jung, 2010; Neumeier, 2005), the processes involved provide a rich opportunity to research hegemonic relationships and power. In the context of blended learning, or the combination of online and face-to-face techniques in classroom teaching, we define power as action that influences outcomes. The action of blogging, for example, influences productive skills in writing and interaction with an audience. Its power, then, produces different outcomes than handwriting a journal. In the process of introducing blended language learning in institutions, the practices of face-to-face pedagogy and online pedagogy are often contentious and sometimes hegemonic. Hegemony, in our study, is demonstrated through a privileging of practices, concepts, spaces, and tools. A hegemonic policy, for example, might require all students to carry tablet computers to write their blogs, or similarly, require them to carry paper journals to write diaries. An educational environment that allows both online and paper-based options, is thus not hegemonic, allowing power to be exerted through multiple paths.

The aim of this study is to investigate how power and hegemony are exercised in two examples of blended language learning programs in Japan. We frame and limit this aim by examining three aspects of

institutional foreign language programs: (a) how the power to privilege certain spaces and types of technologies evolved in a blended environment, (b) how the power in production and ownership of teaching materials changed in a blended environment, and (c) how the power to design software shifted in a blended learning environment.

To achieve this aim, we conducted a longitudinal study of two English language programs within tertiary Japanese institutions. In this paper, we first review postmodern, critical, and ecological perspectives on a conceptual approach to power. We utilize actor-network theory to view the blended approaches where social and technical elements are bound together in semiotic systems. Using this framework, we select data from two institutional blended learning programs that illustrate power relations and describe them as narratives. Finally, we analyze how power has been hegemonic and how it is shifting in the areas of learning spaces, teaching materials, and CALL software development.

### **Understanding Power with Postmodern, Critical and Ecological Perspectives**

Approaches to understanding power in institutional contexts of technology design may include postmodernism, critical theory of technology, and ecological perspectives. Postmodernism seeks to question assumptions of knowledge and practice (Pennycook, 2006). In pre-modern and modern perspectives, power has been considered to be an essential state that an individual or position possesses (Hornborg, 2001). Postmodern theory, however, rejects essentialism and views power as the relation between actors who may mutually create, support or limit each other (Latour, 2005). Power is hegemonic when it denies alternative views and, in the case of education, hinders the development of alternative forms of learning. In line with Foucault's notion of *power to* rather than *power over* (Fox, 2000; Law, 1991), we view power in terms of action rather than domination or empowerment, terms which imply power is 'possessed' by an authority. Power can be seen as symbolic and enacted through semiotic materials or semiotic actions (van Lier, 2004). Through semiotic action, we can see how technologies and practices generate power through materials and objects as well as through human actions and meaning-making.

To better discern hegemonies of power, Feenberg (2002) developed a critical theory of technology. This theory asserts that technologies are not objective entities—which is how essentialists might describe them—but are socially constructed practices-in-action (Feenberg, 2008). The theory is *critical* as it takes issue with deterministic views that technology can dominate or control human action as well as utilitarian (instrumental) views that technology is neutral, merely aiding social actors.

In their studies, Warschauer (1998) and Cutrim Schmid (2006) applied Feenberg's critical theory of technology. Warschauer (1998) observed that research into CALL had essentially abandoned early deterministic views (the computer as 'all-powerful') and adopted instrumental views (the computer as neutral aid). He argued that instrumentalist research often ignored the powerful ways that technologies changed language education, in both creating new literacies and de-emphasizing orthodox literacies. One problem of deterministic (tool-centric) or instrumental (tool-minimized) approaches is that they decontextualize the technology in order to study its essential characteristics (Cutrim Schmid, 2006). Such views have assumed that the essential nature of technologies is fixed (an essentialist view) rather than dependent on their action in the local environment (a relational view).

Actor-network theory provides a set of principles for understanding how humans and materials may co-construct each other (Latour, 2005; Law, 2004). In this postmodern, critical perspective, human behavior cannot be divided from machine behavior as humans co-create and act in accordance with the tools they use. Learning materials, for example, construct pathways of human action. Teaching tools and equipment are physical objects that are designed by humans and contain software coding and hardware configurations set up by humans. These tools and materials are then re-designed or re-purposed in actual use, often with on-the-fly configurations by teachers and students. The physical tools also configure the humans by forcing or preventing certain behaviors. Reading a web page on a tablet computer, for

example, forces a *heads-down* physical behavior in class while a projected web page on a large screen forces a *heads-up* behavior. Thus it is impossible to separate how humans construct the learning behavior from how the tools and materials construct the learning behavior. Researchers who adopt an actor-network perspective do not seek to study tools or the essential features of any actor, but rather focus on action and effects within human-technical networks.

In the field of education, Fenwick and Edwards (2010) explain how actor-network theory can connect the importance of ‘things’ with the actions of teachers and students. Importantly, an historical view of material things cannot simply highlight electronic substitutions (e.g., a slideshow lecture instead of a blackboard lecture), but needs also to consider variations in space, furniture, and modality (e.g., field trips, sitting on floors). Instead of focusing on an online blog, for example, as merely a substitution for a paper-based diary, an actor-network perspective would seek to open up the ‘black box’ (Latour, 1987) of blogging processes (e.g., timings, groupings, interfaces, interactions, workflow, and experiences) and account for the actions of other human and machine technologies in the classroom and beyond. Clearly, technology use is not deterministic, nor neutral, but is socially constructed (Feenberg, 2008) and materially constructed (Bennett, 2010).

Ecological perspectives (Brown, 2000; Lafford, 2009; van Lier, 2004) may also provide insights into the power relationships of technologies in the classroom. Tools are embedded in a mix of synchronous and asynchronous activities inside and outside the classroom, and interconnected with spatial arrangements, multimodal texts, and learner groupings. From an ecological view, teaching tools are not at the center, nor mere aids, but rather a small part of complex classroom/online ecologies that are locally configured. Learning designs, then, are often created on-the-fly as *bricolage* (Berggren et al., 2005), driven by context (Kern & Warschauer, 2000), embedded in *small cultures* (Holliday, 1999) and enacted as *local practice* (Pennycook, 2010). In a study focused on interactive whiteboards, for example, Cutrim Schmid (2006) noticed that actual classroom uses were highly dependent on the local and individual teaching practices, or the ecologies of use, and not particularly on the intentions of the product designers.

Conceptually, ecological perspectives situate the uses of tools within local pedagogic processes. Within local ecologies, van Lier (2007) describes power as “the creation of boundaries between categories (e.g. subject matter boundaries), and the discourses that establish, justify and maintain relations between categories, the conditions for specialization and legitimacy of disciplines” (p. 51). For Lafford (2009), such an ecological perspective for CALL is useful because it is “value-laden and potentially interventionist (i.e. change-oriented and critical)” (p. 675) and thus provides a way to understand, or even disrupt, hegemonic power.

### **Blended Language Learning Environments**

Postmodern, critical and ecological perspectives are useful in examining blended language learning environments because the spatial and pedagogic boundaries are no longer clear and separated, as they have been between CALL laboratories and face-to-face teaching rooms. By combining both online and face-to-face technologies inside one classroom space, the concept of a learning environment requires re-conceptualization for both CALL and second language learning theory.

Our definition of a blended learning environment is specific to second language learning and localized to tertiary learning institutions. While blended learning has many wide-ranging and often conflicting definitions (Oliver & Trigwell, 2005), within university language learning programs, it can be defined more easily by focusing on the spaces and materials assigned to teachers. Some classes are assigned to CALL laboratories, where pedagogic activities are limited to online or software-based programs. Other classes are assigned to face-to-face classrooms, where pedagogic activities are limited to course books and interaction face-to-face between students and teachers. However, a blended room removes these limitations by providing both online/software-based learning with face-to-face learning in the same physical location (Hanson-Smith, 2007). Ideally, computers are so *normalized* that students can move

freely to and from the internet within a single language learning session (Chambers & Bax, 2006). Therefore, for the purpose of this study, we define blended language learning as the combination of CALL classrooms and face-to-face classrooms within a single physical environment.

## RESEARCH APPROACH

To examine power relations in these blended learning environments, we collected qualitative data consisting of interview transcripts, teaching journals and institutional documents in a study extending from 2005 to 2009. Teachers were the main participants, as their role is central in the selection, configuration, and use of technologies in the classroom (Egbert et al., 2009). In one site, we acted as ethnographers with an outsider positionality; in the other site, we acted as action researchers with an insider, interventionist approach (Herr & Anderson, 2005). For the purpose of this paper, we have emphasized the insider data from one institution as it provides richer detail and deeper insight into power relations. In the action research site, for example, we were allowed access to teacher-authored materials and all institutional documents for planning, personnel and budgeting. Furthermore, with one researcher employed on site, that site gave continuous access to the decision-making process during the five-year period of the study.

### Site Descriptions

Each site consisted of an EFL program within a medium-sized, four-year university in Japan. Both sites were similar in that approximately 1,000-2,000 students were enrolled in EFL classes within a total full-time enrollment of 3,000-5,000 full-time students. A steadily declining population within Japan has resulted in declining enrollments across Japanese universities, and has provoked a sense of urgency to present an attractive curriculum in university marketing brochures which often highlight digital technologies, innovation, and global perspectives. Both EFL programs had developed substantial blended language learning environments where movable furniture and computer access were readily available within a single classroom. We use pseudonyms for all participants and anonymized each institution, which we have called 'Kita University' and 'Minami University'.

As of 2009, the EFL program studied at Kita University included 1,300 students attending 240 classes taught by 50 teachers (30 Japanese teachers of English, and 22 native-speaking teachers of English) in a two-year required English curriculum. For the EFL program studied at Minami University, the institution had responded to a growing demand and built a dedicated language center with its own faculty and building. As of 2009, Minami University employed more than 55 full-time, non-Japanese instructors who taught approximately 370 classes for nearly 3,000 students. In both cases, the faculty in the EFL communication programs built their own organizational cultures, which emphasized collaboration among teachers and utilized blended learning rooms for 50-60% of the classes administered.

In contrast, other English courses at these universities were often taught by tenured faculty who typically presented English through prominent literature and linguistic knowledge. Cook (2008) calls this approach, *English as an academic subject*, in contrast to teaching English as communicative skill. An academic's identity in a English department in Japan is typically to be a scholar who specializes in a specific author (e.g., Whitman) or one part of speech (e.g., relative pronouns). Therefore, within many university foreign language programs in Japan, assessments tend to focus on prominent literary works and linguistic knowledge, rather than language proficiency, a persistent practice that has changed little since the introduction of communicative teaching principles in the 1970s (Seargeant, 2009).

In order to counter narrowly focused academic approaches to language learning, the two institutions in this study set up semi-independent faculty for their EFL communication programs. At Kita University, there were two separate EFL curricula: (a) an 'A' curriculum of EFL taught by Japanese teachers that emphasized reading, translation, and listening, and (b) a 'B' curriculum of EFL taught by first language English teachers that emphasized oral communication. In the latter curriculum, which is the focus of this

study, individual instructors designed their own assessments at their own discretion. Minami University also organized an independent EFL communication program, but operating on more collaborative management and employment conditions than for Kita University faculty, they designed a common institutional assessment system consistent with their curriculum.

Both sites in this study employed blended learning rooms for a majority of the EFL communication classes taught at the institutions. Although each site used different furniture, equipment, and internet connections, the types of blending were similar. According to Neumeier's (2005) framework of blended language learning, the sites in this study employed a 'parallel' version of blending, where online activities are directly connected to the face-to-face activities. This is also called a "face-to-face plus online" version of blending (Motteram & Sharma, 2009, p. 90), in which institutional learning management systems (LMSs) are a parallel classroom site that integrates on- and offline activities. In this pattern, activities are conducted synchronously in class and asynchronously out-of-class. The purpose of the LMS in both sites was to integrate online and classroom activities within the given cohort of learners of each course. Although the LMS was a dominant technology, inter-class and cross-institutional collaborative learning activities outside the LMS were being introduced in both sites, involving more complex networks of learners and audiences.

### Participants and Data Collection

Participants at both university sites were teachers and administrators with postgraduate degrees in TESOL or related fields. At Kita University, the primary researcher served on the university-wide IT committee that was responsible for a major renovation of computing facilities. Accordingly, in the action research project, we interviewed twelve faculty members and had access to documents related to the CALL and blended learning facilities and curriculum. At Minami University, we interviewed fourteen faculty and observed blended classroom facilities in operation. Table 1 shows the number of staff in each EFL program according to their faculty role and the number of participants in this study (in brackets).

Table 1. *Participants from Two Blended Language Learning Programs in Japan*

Institution	Part-time contract instructors (participants)	Full-time contract instructors (participants)	Tenured administrators /instructors (participants)	Total EFL communication faculty (participants)
Kita University	10 (1)	8 (8)	4 (3)	22 (12)
Minami University	0 (0)	55 (10)	4 (4)	59 (14)

Minami University employed almost no part-time (adjunct) faculty in their EFL communication program, instead relying on full-time, limited term contract staff. Later in this paper, we discuss how this policy affected power in the blended learning design process at Minami University. For this paper, we selected data from both sites that was relevant to the question of hegemony in three distinct areas: facility design, materials design, and software design. Participant names have been changed to preserve anonymity.

### BLENDED LANGUAGE LEARNING AT KITA UNIVERSITY

Kita University established a large CALL laboratory in 1996 and began to develop blended learning environments in 2006. Approaches to blended language learning at Kita University were grounded in facility designs, materials authoring, and the development of custom software modules for its LMS.

#### Facility Designs

In 1995, Kita University garnered a national grant to build a 44-seat CALL laboratory at a cost of

approximately one million U.S. dollars. The English department led campus resource allocation and images of technology were prominent in marketing campaigns. Teachers were encouraged to switch to computer-based approaches and the lab was filled each day. Computers, it was thought, truly had the power to transform passive forms of language teaching with interactive, drill-intensive pedagogic approaches. Yet some teachers quietly voiced concern:

*I think CALL is not suited for communication-based classes. Students need to do pair-work and face each other, not a computer screen. [George, 2005]*

*It looks like teaching in a CALL lab is like running a factory. The teacher sits behind lots of screens and machinery, watching the students do their work. [Sarah, 2005]*

Teachers were raising concerns about how the physical layout affected student-to-student and student-to-teacher interactions. The high-profile investment in the CALL lab, however, stifled debate. Significantly, the high cost of a CALL lab meant the school could afford to build only one room. As this lab was often fully scheduled for a relatively small group of students and teachers, the majority of teachers were able to continue their own pedagogic practices in the numerous face-to-face teaching rooms. Gradually, the CALL lab usage declined because both communication instructors and academic language teachers wished to avoid the rigid physical layout and packaged software, preferring settings fitted with a blackboard, movable desks and chairs, and paper-based materials. A teacher in an EFL composition class explained his preference for using paper:

*My students can write just as much in a paper journal than in a computer journal. Plus I can easily have them read and comment on each other's journals in the beginning of class. Computers are clumsy for exchanging information student-to-student in the classroom. I want to control the pacing of activities and keep the class moving. [Steve, 2008]*

Additionally, an EFL communication teacher expressed concern about the difficulties with student interaction in the CALL lab:

*I don't think my students are doing well at reading faces and exchanging feelings. A computer screen can't help there. [Maria, 2009]*

In response to an institutional survey of foreign language instructors initiated by the lead teacher, Kita University remodeled existing computer laboratories into five blended learning rooms. In each of the remodeled rooms, computers were moved away from the center of class to line the walls, and movable desks and chairs were placed in the center of the room. The aim was to combine both face-to-face and online technologies in the same room, a strategy that proved to be both appealing to teachers and cost-effective, through the use of standard (non-CALL) equipment for internet access.

In 2009, at the end of the study, all five blended rooms were booked solid throughout the week, while the single CALL lab was half-filled. The teachers using the blended rooms reported doing face-to-face activities for about 80% of class time and using the remaining 20% of the period for online activities on an institutional LMS. Coursebooks, workbooks, and handouts were commonly used in class and often combined with a document camera to project the paper materials on a large screen. The mix of media and technologies was complex and determined by each teacher. Occasionally, teaching teams collaborated and built common materials and activities. Instead of packaged courseware, teachers were combining self-developed quizzes, surveys, and forums on the LMS along with copied handouts or commercial coursebooks to build content-based materials to fit a particular major or level of students.

The initial hegemony of computers configured with CALL software in a closed language laboratory

allowed it to receive budgetary priority. The laboratory had been a showplace that enabled the school to compete against other schools in new student recruitment. However, later expansions avoided the CALL lab design, instead configuring multi-purpose blended rooms using standard, low-cost (non-CALL) equipment. IT committee planners recognized the value of flexible classroom layout to enable pair-work and group work, and increased support for in-house printed handouts and booklets. Based on a study of blended learning environments, Hinkelman (2009) claims that paper-based technologies are not necessarily being reduced in foreign language instruction, despite efforts to produce a 'paperless classroom' (Robb, 1997). Instead, paper materials have evolved, taking on new functions and multiple roles, such as: (a) recording information, (b) giving instructions, (c) publishing or pre-writing for projects, (d) prompting dialogue, (e) keeping records, and (f) assessing peers. With the greater use of pair-work, paper-based materials and other non-electronic technologies in the blended learning rooms, some teachers exhibited a growing excitement about students no longer facing a row of computer screens, as well as their own ability to encourage out-of-class, individual study:

*I love the new rooms. With the projector and the students facing forward, I can get their attention and hold it. They know what to do in the next task and the pace of the class moves along. I don't like using computers so much because it is like a dull game for them. So I limit the Web work to the last 15 minutes of class and they can get a start on homework. Before I could never get them to do homework. [James, 2008]*

Administrators and head teachers ceased pushing electronic technologies on the program and instead responded to small changes proposed by the action research teaching team. The head teacher encouraged photocopying and printing of self-made materials and set up a pilot project to replace commercial textbooks with teacher-authored materials, as explained in the next section.

### Materials Authoring

In the midst of a shift to increasing use of blended learning rooms, teachers began developing more locally authored multimedia materials. Until 2006, all teachers had used internationally published coursebooks for oral communication, based on a functional syllabus. One teacher expressed dissatisfaction:

*I have mixed feeling about these standard textbooks. The students complain they are expensive and they don't always fit the wide range of levels and interests of our students. I have been teaching here for ten years, so I know what works and what doesn't work. For example, this textbook has a lesson on restaurant English, something 5% of them might use if they take a trip abroad someday in the future. I prefer to make topics that students need to use now in their university life. [George, 2005]*

With an internet-based LMS being made available to each student in the blended classrooms, teachers wanted to move listening exercises onto the Web instead of doing whole-class activities with a CD player during class time. To build a large bank of quizzes for students, the four teachers in the action research team created these specialized EFL materials for oral communication courses. To divide up the labor-intensive task of materials creation, they created a two-year curriculum that consisted of twelve projects. Each project had a small booklet of blended tasks. Teachers enjoyed the opportunity to be creative; nonetheless, weekly layout and printing chores grew tiresome. Some teachers built extensive booklets, and others did not. Some teachers felt the materials were unusable and others complained about the workload:

*We each have our own teaching styles and I can't teach with [his] materials. It does not work for me. Also, I am working past six o'clock every night just trying to print up papers for the next day.*

*I am not a graphic designer. Why are we reinventing the wheel?* [Rebecca, 2008]

*The problem is that with 10 classes to handle [each week], I just don't have the time to make good materials.* [James, 2008]

The team-authoring approach proved frustrating. After three months of effort, two members returned to commercial textbooks and two others continued to prepare original material for their own classes. The lead teacher expressed dismay:

*There is no way I can build good [online and print] multimedia activities by myself. Even if three or four get together it is not enough. Surely some kind of mass collaboration like Wikipedia could be organized to pull like-minded teachers together.* [Steve, 2008]

Due to a limited number of staff committed to collaborative authoring and insufficient incentives to author in-house materials, the grand plans of the action research team were abandoned. The lead teacher then persisted with several small-scale initiatives: (a) building a shared online question bank with 1000 multimedia quiz items (multiple-choice, cloze, matching, and ordering types) that followed the syllabus of the most popular textbook chosen by the teachers, (b) monthly meetings to share lesson plans, and (c) a department-by-department content-based curriculum for just the top students in each department (law, economics, psychology, elementary education, etc.). The materials selection and creation was still undertaken independently by teachers. However, as the power of materials authoring shifted from mass-market publishers to teacher-based, in-house curriculum design, incentives to save development time came from collaborative teamwork, and workload sharing gradually affected the overall institutional environment.

### Development of Custom Software Modules

In parallel to the blended learning room renovation and locally authored materials, teachers began designing online software modules to accompany their face-to-face lesson plans. In 2003, one faculty member used open source software to build an inexpensive LMS server at Kita University. Because the LMS code was open source, two teachers, Akio and Steve, with the help of a programmer, were able to alter some existing LMS modules and build some totally new activity designs from scratch. Over the next eight years, three custom modules and ten other software modifications were initiated by the teachers.

One case in particular highlights issues of power in the design process. In this case, Akio, a Japanese professor of linguistics who taught using an academic pedagogic approach, built a module based on his practice of a teaching method called “bidirectional lectures”, which he estimated ten to twenty percent of the university lecturers at Kita University had adopted. Bidirectional lectures use a response paper that students fill out at the end of lecture to summarize the key points of the lecture and to ask the lecturer questions (Tanaka, 1999). Typically, a lecture class will include from 50-150 students, which meant reading and summarizing the responses on paper was a very labor-intensive job. Akio took this process very seriously and collated the response papers and prepared a two-page summary of key student insights and questions, which he copied and returned to the students the following week. That handout became the basis of the first 20-30 minutes of his lecture. He was satisfied with the general operation of the system:

*My students usually explain the points of the class better than I do. The questions they ask are straightforward and force me to think about the value of what I was trying to teach.* [Akio, 2006]

When the open source LMS was installed at Kita University in 2004, he suggested designing an LMS-based version of the response papers, which he called the “Lecture-feedback Module”. With this system, students entered their responses each week after class by going to the class Website in one of the



computer labs on campus. This eliminated manually retyping the data, collating similar themes, and rating key phrases by the students. Akio was able to reduce his paperwork from eight hours to three hours per week. The resulting weekly summary was formatted as a pdf file and posted on the LMS for absent students to access. He then printed copies and handed these out to students in the following class. Paper copies were important because the students did not have computers in the lecture hall, but could easily focus on the summary on his two-page handout. He projected the handout onto a large screen with a document camera and marked up the key points with a red marker pen. Then he delivered a lecture on new material, writing key words with chalk on a blackboard. The LMS became a record of the course, allowing a collection of student-authored comments, access to the teacher's summary papers, and tracking of individual student participation for assessment at the end of the term. Akio thus built a blended learning environment which consisted of an ecology of student input texts, LMS modules, pdf files, photocopiers, paper handouts, projectors, document cameras, marker pens, blackboards, and his own voice.

The lecture feedback module that Akio created may have been more appropriate to the school culture and his classroom culture than other standard modules on the LMS (such as forum and chat modules). We speculated that it respected the teacher-student hierarchy, because it was a formal process that was systematically assessed. Yet it was transformational (compared to many non-interactive lectures in the university) in that some aspects of the content were co-created by teacher and students. However, one communication instructor, an American by birth, showed puzzlement and curiosity towards this module:

*I would have never tried to create such a kind of module, because I prefer to involve students with more peer-to-peer interaction. I also don't have large lecture classes to deal with. I wonder, though, how he gets such high quality responses. Writing in their first language may explain it, but also I am impressed that his process was repeated in the same pattern, week-by-week over the fifteen-week semester. Students seem to take his approach more seriously than mine. [Steve, 2008]*

Many American-born educators take an informal approach that assumes a more equal relationship between teacher and student, while Akio's approach made no such pretense. These different approaches to innovation suggest that multiple teaching cultures in the language departments of universities may result in differing patterns of use of LMSs and other online tools. This possibility may be ignored by educators raised in Western cultures, who may assume 'traditional' teaching practices are not innovative. Waters (2009) concludes that a majority of innovation studies are:

...written by native speakers of English, draw on literature from the English-speaking world for much of their academic background, and tend to be associated with native speaker-led innovation experiences. It therefore seems inevitable that the overall picture in this respect is a culturally-biased one. (p. 451)

At first we assumed this kind of cultural bias explained the varying paths of module development at Kita University, and that Japanese values of formality and hierarchy in the classroom led to this behavior. However, after taking this reasoning to Akio in a follow-up interview, he replied:

*Hmm. I don't think about [hierarchy and roles] so much. I think it is more that my class is so large and yours is small. In small classes, I use oral activities a lot, too. [Akio, 2009]*

His response suggests the design of classroom environments in this case may have been less related to cultural values and more affected by the number of students and the differing pedagogic aims of the courses (academic knowledge about language vs. productive communication of language). At Kita

University, lecture-based classes were typically five to ten times as large as seminars or language communication classes. Communication teachers could thus avoid such large classes and tended to develop LMS modules that accompanied activities fit for smaller, more intimate classroom settings. Akio's classes, in contrast, ranged from 50-150 students. We also noticed that year by year, Akio continued to improve his module and make changes in his blended lecturing environment. In 2008, he redesigned the module to work on mobile phones, so students could complete the lecture responses immediately, during the final ten minutes of class time. In 2009, instead of lecturing with handwritten notes on a blackboard, Akio transferred his lecture points to slides projected on a large screen. Using a long computer laboratory with two parallel rows of students, he would walk up and down the rows as he lectured. A remote control for his slide show enabled him to be free from the front of class. He described how this changed his relationship with the students:

*By walking within the rows of students and using a remote control, I learned to see the lecture from the students' point of view. When students were talking I was able to stop and enter their private discussions and either help them understand a point, or pull their attention back. Instead of standing up front on the podium, I could stand with the students. It feels like a kind of shoulder-to-shoulder communication. [Akio, 2009]*

This new teaching practice shows how the physical relationships of teacher, student, and texts were changing with the addition of new technologies. The physical layout of the classroom and the remote controlled slides exerted power and shifted the communication patterns in the sessions. In addition, the technology ecosystem in Akio's class was based on a lecturing pedagogical approach, which could explain why technological change followed different paths within the same institution according to differing class sizes and differing pedagogical aims. In contrast, other instructors assigned to small classes with communicative aims chose to create LMS modules and courseware that emphasized student-to-student communication rather than lecture comprehension.

## **BLENDED LANGUAGE LEARNING AT MINAMI UNIVERSITY**

In 2002, Minami University also began developing blended learning environments in its EFL program. This institution did not have a history of language lab use; instead, a self-access learning center was established to promote individual efforts.

Along with the purpose-built facilities, a personnel management system defined how the language curriculum and the blended learning practices were designed. For the majority of the positions, teachers were hired from abroad on limited-term full-time contracts, which ran counter to a common practice of hiring most faculty on casual, part-time contracts. The importance of the employment contract was explained by one of the administrators:

*Our teachers have a contract, which spells out their duties in three terms. One is a teaching obligation. And they have eight hours of teaching per week during the semester. The second one is a research component of the contract, and they are required to fully participate in one of the research institute's institutional research projects. And the third component is a requirement for socializing with students, and is for work outside of the regular classroom. We call that a socializing function ... [Jack, 2005]*

Participation in institutional, curriculum research teams was required of all faculty through their contracts, which stipulated promotions according to productive research and curricular development that benefited the program. These teams also emphasized in-house materials development, to the point where the majority of paper materials and all online materials were developed by Minami University faculty. The director elaborated on this philosophy:

*As an educator, I've been very much concerned in many parts of the world with the design and development of instructional materials, which are seen as being at the heart of the educational process, and that if our discipline is to be taken seriously, these must be produced not by dilettantes like [famous textbook authors], but rather in a systematic way and so, when I came here, one condition was that I would be responsible for the development of proficiency with a system of instructional materials design, which was based upon the collaboration of all members who were going to be teaching. [Jack, 2005]*

The materials were collaboratively authored with annual iterations for more than a decade. Thus ownership of materials was localized in the institution. This philosophy meant commercialized CALL systems and textbooks never took hold in the foreign language program. Instead the curriculum materials were produced in-house by teacher teams. This collaborative culture was independent from the other academic departments, and solely institutionalized within the English Communication Institute that grew from four to 55 members. Although the entirety of this staff was non-Japanese, the management structure of the English Communication Institute differed from the English Department—in which both Japanese and non-Japanese faculty adhered to an academic approach to language learning. Therefore, the power in the design of the institutional environment was not related to the cultural background of the individual teachers but rather emergent from the organizational culture of the institute.

The director's vision became embedded in this program through common practices and formal contracts that guided the operation. The faculty was socialized to a set of values that were codified into the limited-term contracts. The director explained the role of these requirements:

*This has always been the ethos of the [English Communication Institute]. We now have it formalized that this research component is an integral part, which will determine whether teachers get offered a new contract [...] And we forced them to collaborate in the development of the curriculum. [Jack, 2005].*

These rules of management, however, were not widely accepted by other academics:

*The idea that we would set up this collaborative research-based curriculum development project met with a great deal of resistance. You will know that Japanese professors have the right to teach whatever they like, and not be dragooned into teaching something that they don't feel comfortable with. [Jack, 2005]*

Thus collaboration was forced as a requirement of employment of new staff. This vision was institutionalized into a policy that became a powerful actor in the working culture, but only within this one part of the institution—the main academic departments were not affected. Importantly, these research project teams took responsibility for not only designing curriculum and materials, but also controlling certain budgets and planning for school-wide services.

One result of the distributed authority and budgeting was the creation of six blended learning rooms. Four teachers, including one tenured head teacher and three representatives from research teams, were assigned to build the architectural designs and equipment/furniture specifications of teaching spaces in a new building. These rooms—called 'Blended Learning Spaces'—were the showcase of the Media Center building, which won a national award for architecture in education. Each blended room was equipped with movable desks and chairs along with a wireless system of notebook computers, and a projector/screen for whole class presentations. The notebook computers were housed in a cabinet and could be used anywhere in the room. These notebooks were used for both standalone word-processing and internet-based tasks. Many of these tasks were accessed on individual class sites within the open-source LMS. This blended learning system was flexible enough to allow teachers to determine the degree

of computer-based technology to include in their classes. Computer availability and flexible classroom facilities were important to teachers, and as teachers themselves, the design committee built a physical environment that reflected curricular values. As a result, the rooms were completely booked throughout each day of week. The popularity of the blended learning spaces led the university to build three more of these classrooms in another new building in 2009.

## POWER IN THE DESIGN OF BLENDED LEARNING ENVIRONMENTS

This section discusses aspects of hegemony across the two institutions in this study. We focus first on facility design (power in technologies), then materials design (power in authorship), and finally software design (power in licensing).

### Hegemony in the Design of Facilities: Electronic Laboratories

Initially, Kita University chose to emphasize a CALL laboratory as the core technology to publicize in its curriculum. Hegemony of technology is shown in this case as the power of electronic technology selection policies to ignore or discount face-to-face and print-based technologies. This power was enhanced by national-level political practices, which provided considerable funding that favored electronic over non-electronic tools. Hornborg (2001) argues that “asymmetries are systematically concealed from view by the hegemonic economic vocabulary” (p. 3) and recommends a *defamiliarization* of common concepts. By defamiliarizing and reconstructing concepts of technology to combine the non-electronic into the structure of the design, and de-prioritizing the electronic and its commercialized, encapsulated formats, Kita University and Minami University were able to create ‘blended’ language learning rooms. These blended designs balanced online and face-to-face practices and thus avoided idealizing or *fetishizing* one aspect of technology (Hornborg, 2008). Beyond these two institutions, studies in Japan advocating blended learning practices (Miyachi, 2009) have neutralized the once-common view that electronically based approaches to language learning (e.g. e-learning) should be given precedence over face-to-face techniques.

The shift from CALL laboratory equipment to blended learning rooms was not only a conceptual power struggle among teachers and administrators, but also included commercial and technical factors. The design of the CALL lab at Kita University included highly packaged and inflexible courseware, thus it could not accommodate a wide variety of teaching practices. Rather than using standardized, off-the-shelf parts and open source software, the CALL setup was highly customized, requiring special hardware and software that cost more than 500% over the expenditure for one blended language learning room. This made replication of CALL labs unsustainable within the institution and thus the lab became a single-room showcase rather than a model for other spaces. Law (2004) describes technology packages as ‘black boxes’ that need to be opened and examined to see their network relations. Opening a CALL lab to understand its structure seems highly dependent upon a number of economic designs (e.g., licenses, copyrighted content), pedagogic designs (closed answer activities), and architectural designs (single-room wired LAN, fixed desks and screens) that may mitigate against wider adoption. Subsequent changes in these socio-technical designs have allowed a blended architecture to evolve (Web-based delivery, open source licenses, and locally authored content).

In Minami University, emphasis on curriculum was the driving force in building design and equipment selection, as one teacher observed:

*So rather than building a building and then starting from scratch, we had the curriculum and the curriculum seemed to be working well with the research projects. And each project needed this equipment or this space. So the design of the building came from what we needed to develop our curriculum. [Alicia, 2005]*

Thus blended learning spaces were created to allow teachers to use new technologies bit by bit as needed, in line with Hornborg (2008), who remarked: “all technological systems are embedded in cultural—and political—webs of significance that tend to remain invisible (because self-evident) to the users of these technologies” (p. 4). Minami University’s strong collaborative teaching culture and in-house curriculum design meant there was little concern with idealized solutions such as CALL laboratories for teaching. Consequently, the task of designing the new building dedicated to language learning was given to a team of four teachers who chose designs based on the ongoing practices of the institution. The hegemony of packaged electronic solutions for language learning was neutralized by this focus on curriculum and decentralized budgetary decision-making.

Although the director of the program appeared to be the nexus of power in the design of the blended environment, postmodern perspectives such as actor-network theory (Law, 2004) assert that people or tools do not possess power but act within a network of semiotic relationships. In this case, the primary *actor-network* was an employment contract, which directed teachers to work in mandatory research teams. This contract *acts* or exerts power within the network, which affects architectural planning, materials design, and testing policies and keeps faculty aligned and working together. The funding support of the owner of this privately funded institution was also an important part of the network, yet the majority of curriculum, facility and technology design decisions were actually made by collaborative groups of teachers. The director played a role of enforcing values and funding priorities based on a collaborative ethos embodied in a collective agreement symbolized by the contract. Separated from the prevailing culture of academic independence, teachers at Minami University had egalitarian access to curriculum-targeted research grants. A large body of committed staff was thus stabilized by comprehensive contracts and professional development assessments, which were the powerful ‘actor-networks’ that drove innovation in this blended language learning program.

### **Hegemony in the Design of Teaching Materials: Mass-marketed Coursebooks**

Minami University, with a powerful set of eight collaborative materials development teams, produced virtually all of its printed and online materials in-house. It overcame the hegemonies of mass-market coursebooks and individualistic teacher practices by enforcing a personnel contract that maintained institutional values. These policies gave priority to providing a more localized and learner-appropriate language program, in alignment with principles of *teacher-based course development* (Graves, 1996) and *teacher-produced materials* (Harwood, 2010).

At Kita University, the situation was different as mass-marketed coursebooks dominated the university EFL program. Rather than a coordinated curriculum that determined course syllabuses, these textbooks forced syllabus selection and topic sequencing for each class. Teachers individually choose coursebooks, so there was little coordination in classes, a wide variety of syllabuses, and strong resistance to institutional standards or testing. Attempts to switch to program-wide assessments, team research collaboration, and teacher authoring of materials failed due to individualistic values and the high cost in the time required designing and printing the materials. Initially, in 2008, six full-time teachers intended to jointly prepare materials for classes but within a month this plan broke down because the action research team could not agree on common language learning principles, types of media, and lesson flows. The lead teacher recommended a shift to an integrated syllabus by adopting a single commercial textbook. This met with a fragmented reaction by the other five teachers. Two ignored the recommendation, one chose to use the printed textbook alone, and the other two joined the lead teacher in using the recommended textbook blended with online audio and video-based exercises. Even this effort to create multimedia activities languished because adding voice, images and video to LMS quizzes materials was so time-consuming, and there were few incentives to individually develop custom materials.

The struggles with blended learning materials at Kita University may be related to two issues of power. The first issue of power concerns shifts in roles of teachers. At Minami University, teachers were given

roles as researchers and materials developers within a tightly integrated curriculum and an ethos of collaboration. At Kita University, teacher roles were limited to classroom instruction, and reinforced by an ethos of academic independence. Under these conditions, collaborative action research interventions became fragmented or were abandoned. In contrast, the employment contract at Minami University was an extremely powerful actor in an ecology that built an institutional effort to create evolving, locally designed teaching materials.

The second issue of power concerns shifts in modalities. Somekh (2008) notes that electronic technology is problematic, not so much for the costs in funding or learning time, but rather because it “consistently destabilizes the established routines of classroom life including norms of time and space” (p. 452). The loss of routines and the instability of space may lead to skepticism among ‘conservative’ or reluctant teachers, who have legitimate unanswered questions about the appropriateness of new technologies. One of these concerns may be an unrecognized switch in modalities, such as the change from face-to-face communication in classrooms to text-based communication online. Lamy and Hampel (2007) acknowledge that online learning tools often provide reduced contexts and “disembodied environments, unable to replicate modes such as gestures or touch” (p. 38). While non-verbal modalities such as voice inflection, eye contact, kinesthetic and tactile interaction are removed and disregarded in many electronic environments, blended environments can retain these. In the same way, a blended environment can add extra digital modalities—such as audio, video, drawing, hyperlinking, commenting, and other online participation behaviors—to face-to-face and text-based environments. These ‘new’ modalities are often marginalized in a classic four-skills curriculum, leading to calls for multimodal approaches to education (Kress, 2009) that focus on a variety of digital literacies (Lankshear & Knobel, 2008). The rich variation of ‘old’ and ‘new’ modalities is the basis of *variation theory*, which Oliver and Trigwell (2005) claim is the strongest pedagogical justification for using a blended learning approach. This study reveals the emerging power of new modalities and newly required literacies exerting their influence by destabilizing established practices.

### **Hegemony in the Design of Software: Proprietary Systems**

At Kita University, the initial CALL systems installed in the 1990s were proprietary systems that integrated content and activities in a single commercial package. This package, named the *CALL Lab*, was considered a standard language learning tool at this school until social-technical conditions changed over the next decade. As Hornborg (2001) argued, it exhibited a culturally constructed power that was “inevitable and natural” (p. 1). Gradually, Web-based systems proliferated and at Kita University, the teachers involved in designing new modules for the LMS could produce various types of modules (for lecture feedback and project-based learning) because of the low cost and public rights to build modules in an open source environment. The decommercialization of the LMS may have played a very large role in the development of multiple-approach online/hybrid activities designed for local teaching cultures.

Commercial LMSs often allow selected commercial add-on components but uniformly forbid customization of code by teachers in local installations. In a proprietary system, it would be impossible for two teachers to create new modules as they did at Kita University. In contrast to large-scale, international publisher-driven CALL and coursebook designs, local initiatives at Kita University saw power exerted by teachers rather than expert designers. With low cost programming (under US \$1,000 per module), tenured teachers could afford the design within their discretionary research funds, and they could thus produce strategically different pedagogic approaches. One design, by Akio, emphasized a systematic, repetitive and formal approach to learning. Steve, however, valued creative, spontaneous, and informal use of the LMS. These approaches required different forms of socialization of the student members of the class and established differing *small cultures* within the institution (Holliday, 1999). Furthermore, this approach to LMS design emphasized technology design as *bricolage*, a trial-and-error approach as opposed to intensive research and development initiatives (Garud & Karnoe, 2003). This aligns with those who advocate teacher-centered materials design (Harwood, 2010) and teacher-centered

curriculum design (Graves, 1996).

Examining the nature of power in LMS design, initially we interpreted the lecture feedback design by Akio on the basis of national culture (i.e., hierarchical values in Japanese culture). Later, in view of Pennycook's criticism of a national culture perspective (2010), we identified other factors that might explain why his module designs were different from those of other teachers. Taking the small, local culture approach, we noticed that Akio was using his power as a teacher to make incremental and manageable changes in his classroom to save his own preparation time within a large class size environment. Akio maintained a lecture-based pedagogy and explained how he used to spend eight hours processing student response papers, but with the lecture-feedback module, processing time was reduced to three hours, and each student's responses could be traced in a database.

Yet efficiency alone as a cultural value does not explain why Akio could and did design new LMS modules. Broad economic and political re-structuring within computer-based learning, not possible in the 1990s, allowed teachers to customize their LMSs. First, Web-based e-learning meant there was no need for specialized CALL hardware and software, thus allowing any computer room or computing device to act as a CALL laboratory. Then inexpensive servers with open source databases and operating systems lowered costs by a factor of ten in Japan (Hinkelman, 2005) allowing local customization and low-cost adoption by tinkering teachers.

Finally, public licensing and distributed programming assistance meant that standard Web programming services could be sourced from low-cost countries. These factors changed the power structure from exclusive control by commercial firms and gave Akio, as an individual teacher, power to enact changes he had been thinking about for a long time but could not act on due to the expense of a server and access to programming. He then chose one aspect of his classes to improve (the response sheet management) and made that semi-automatized with a new module. In other words, this design change to make a blended environment was not attempted from a teacher belief that discussions were better than lectures, but from a pragmatic perspective on dealing with a large class of a hundred students. Then, as he applied the new module, he discovered more insights. He added mobile phone input to the response sheets to give more options to students. After shifting from handwriting on blackboards to projecting visual texts and images on slideshows, he found himself physically closer to the students and better able to perceive their perspectives on the lecture. Students learned the classroom routines and changed their note-taking and classroom behavior.

These effects of technology change in blended environments are not predictable when iterative change is happening in individual teachers' classrooms, and confirm that technical designs are constructed locally based on economic and political factors (Hornborg, 2001), such as the employment contracts at Minami University and the independent teaching culture at Kita University. Some of the technologies observed in the classrooms were combinations or *hybrids* (Latour, 2005) of online and face-to-face actions, such as the lecture-feedback module of Akio's practice, or student-to-student surveys collected in face-to-face interviews and reported with online summaries. In blended classrooms, we found new ecologies of technology use emerging that no one had predicted and no commercial firms had been marketing, such as in the blended practice of using document cameras to project coursebooks and handouts during whole class activities. In line with critical and ecological views (van Lier, 2007; Warschauer, 1998), technology in the language classroom was not a neutral aid nor a triumphal savior but a complex, multi-dimensional set of processes that changed both *how* teachers and students learned and *what* they learned.

## **LIMITATIONS AND IMPLICATIONS FOR DESIGN IN BLENDED LEARNING ENVIRONMENTS**

In summary, this study has identified and interpreted three issues of hegemonic relationships of power that initially influenced the design of blended language learning environments in two institutional EFL

programs in Japan. In facility design, electronic laboratories were privileged over face-to-face classroom environments. Blended learning rooms allowed both environments to be used simultaneously in classes, according to teachers' lesson planning. In materials design, mass-market coursebooks were favored over teacher-authored multimedia materials. Blended learning environments required multimodal materials and assessments to be developed locally to match the changes in classroom activities. In CALL laboratory design, commercial, proprietary systems prevented local software customization from developing. A switch to open-source, Web-based LMSs with access in all blended learning rooms allowed teachers to prepare custom modules. All of these situations showed evidence that power was redistributed to allow these three marginalized practices (face-to-face teaching, teacher-authored materials, and locally-designed software) greater prominence in the blended learning design. That redistribution happened not exclusively from interventionist strategies (e.g., action research), but also from larger-scale change in the political and economic ecosystems of language learning technology (e.g., open source proliferation) and smaller-scale change due to unintentional effects of new equipment and room arrangements.

In ethnographic and action research studies of learning environments, there is no aim to propose generalizable claims (Burns, 2010; Nunan & Bailey, 2009). The intent in such qualitative studies and narrative inquiry is to describe the situation with relevant detail and reflexivity in order for practitioners to draw likely parallels to their local practice (Pavlenko & Lantolf, 2000). Thus the limitations in this study are primarily in understanding the breadth of applicability of these sites and the local designs they created. The participants in this study were limited primarily to teachers and thus their views were privileged. Selection criteria for interviews focused on active teachers involved in the development of blended learning environments. These tended to be non-Japanese, first language teachers of English oral communication. These teachers thus had smaller classes than did teachers of literature and linguistics, who had to deal with large class management issues.

Even within the context of university education in Japan, the relevance of Minami University's case is initially unclear. Starting a new university is a rare case, and even rarer is a single administrator given the resources to implement a vision of faculty management that runs counter to common university practice. As there are no other universities in Japan with a separate institute of 55 foreign faculty, it is easy to discount the relevance of Minami University to other institutions. Nonetheless, in the past two years, administrators of Minami University have reported that they have replicated their management structure in two other universities in Japan, which now hire new teachers recommended by Minami University and require a similar contract based on collaborative values. At the same time, by establishing a career path for its best teachers whose contracts are expiring, Minami University's own problem of staff termination is addressed to a small degree. This suggests that a management system based on contracted, collaborative team research can be both replicable and sustainable. While this focus on a collaborative institutional culture has been the major theme of this study, we also acknowledge that the role of the lone innovator or visionary, as embodied by Jack, Akio, or Steve, may play a powerful role in the design of blended learning environments.

Implications of the study suggest the concept of technology in blended environments needs to be expanded from a focus on integrating electronic tools to configuring hybrid face-to-face and online activities. Second, blended learning is not only a descriptive category of technology use in education, but also an interventionist strategy of iterative change in integrating face-to-face techniques with computer-based techniques. In language learning programs, power relations can be established that enable democratizing of design in teacher-based work groups. This happens when job responsibilities are formally mandated to include collaborative research and materials development. This implies the management structure of teaching faculty may be a more important factor in the design of blended environments than techno-centric CALL studies might suggest. Finally, the low political and economic barriers to public, open source LMS design can facilitate a *bricolage* atmosphere for teachers to create the environments they intuitively desire to offer their students for learning. This study concludes that critical



interventions in blended language learning environments are not simply injecting new electronic technologies into programs, but rather effecting change by the redistribution of power in ways that enable principled, appropriate, and sustainable design.

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